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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,210	12/10/2003	Robert John Allen	YOR920030406US1 (8728-649)	8018
46069	7590	07/20/2005	EXAMINER	
F. CHAU & ASSOCIATES, LLC 130 WOODBURY ROAD WOODBURY, NY 11797			DINH, PAUL	
			ART UNIT	PAPER NUMBER
			2825	

DATE MAILED: 07/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/733,210

Applicant(s)

ALLEN ET AL.

Examiner

Paul Dinh

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 June 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 and 16-27 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-12 and 16-27 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

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### DETAILED ACTION

This is a response to the applicant remarks filed on 6/27/05.

New grounds of rejection have been cited in this office action in view of the remarks.

Claims 1-11 and 16-26 are pending.

### *Claim Rejections - 35 USC § 112*

*The following is a quotation of the second paragraph of 35 U.S.C. 112:*

*The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.*

Claims 1-12 and 16-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 16 are rejected because "transformation" in these claims is an incomplete structure; i.e., (a) transform what and (b) transform from what to what.

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

Claims 2-12 and 17-27 are rejected because they depend on claims 1 and 16, respectively.

### *Claim Rejections - 35 USC § 102*

*The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:*

*A person shall be entitled to a patent unless –*

*(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

*(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.*

1. Claims 1-2, 16-17 are rejected under 35 U.S.C. 102(b) as being anticipated by  
Bartels et al (USP 6263480)

(Claims 1, 16)

Representing a structure of a hierarchical VLSI design as a graph comprising design objects (fig 4);

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Specifying a transformation behavior (fig 4) applied to the design objects; and

Processing, top-down, the graph to perform the transformation on the hierarchical VLSI design (fig 4).

(Claims 2, 17) wherein the processing further comprises searching for an isomorphic structure (Col 2 line 59).

2. Claims 1-12 and 16-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Russel et al (USP 5519628)

(Claims 1, 16)

Representing a structure of a hierarchical VLSI design as a graph comprising design objects (fig 2, 13-25, 31, 55-56, 63);

Specifying a transformation behavior (fig 15-22, 31, 38-56, 62-63) applied to the design objects; and

Processing, top-down, the graph to perform the transformation on the hierarchical VLSI design (fig 15-22, 31, 38-56, 62-63)

(Claims 2, 17) wherein the processing further comprises searching for an isomorphic structure (Col 33 line 51).

(Claims 3, 12, 18, 27) wherein the graph describes a plurality of scopes, wherein each scope comprise an internal node and a leaf node (col 1, fig 55)

(Claims 4, 19) wherein the graph (fig 2, 13-25, 31, 55-56, 63) is based on a point set interaction between structures of the hierarchical very large scale integration design.

(Claims 5, 20) wherein the graph is based on symmetry groups between structures of the hierarchical VLSI design wherein the graph represents a circuit substructure (summary, fig 54-58).

(Claims 6, 21) wherein an attribute (col 29) is attached to a design object, the attribute having a user-defined mapping between an attribute transformation and a design object transformation (col 29, 33).

(Claims 7, 22) wherein processing, top-down, comprising transferring information from a child graph to a parent graph, wherein a node in the parent graph represent an instance of the child graph (fig 5-6, 14-16, 55).

(Claims 8, 23) wherein processing, top-down, the graph comprises resolving boundary conditions (fig 11, 55, 63-64, 72, col 6), recursively, by adjusting a parent cell, beginning with a root cell of the graph (fig 11, 55, 63-64, 72)

(Claims 9-11, 24-26) wherein each cell is represented by a plurality of connected least enclosing orthogonal point sets (fig 7-11, 31-37, 57, 61, 64, 69, 72); determining an interaction between the least enclosing orthogonal point sets (fig 7-11, 31-37, 57, 61, 64, 69, 72); and determining a decomposition of the cell according to the interaction; wherein processing, top-down, further comprises cloning by expression using a result of the decomposition to produce a cell definition (fig 7-11, 31-37, 57, 61, 64, 69, 72).

3. Claims 1, 3-12, 16, 18-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Teig et al (US Patent application Publication No. 2004/0123260)

(Claims 1, 16)

Representing a structure of a hierarchical VLSI design as a graph comprising design objects (fig 39);

Specifying a transformation behavior applied to the design objects (para 0003); and

Processing, top-down, the graph to perform the transformation on the hierarchical VLSI design (fig 39).

(Claims 3, 12, 18, 27) wherein the graph describes a plurality of scopes, wherein each scope comprise an internal node and a leaf node (para. 0138-0141, 0149-0160, 0169-0170)

(Claims 4, 19) wherein the graph is based on a point set interaction between structures of the hierarchical very large scale integration design (para 0115, 0117, 0128, 0251-0253).

(Claims 5, 20) wherein the graph is based on symmetry groups between structures of the hierarchical VLSI design wherein the graph represents a circuit substructure (abstract, para. 0026, 0251-0252, 0326, claim 1).

(Claims 6, 21) wherein an attribute (abstract, para. 0040-0043, 0116-0126, 0148, 0174, 0214, 0216, 0227, 0274-0277) is attached to a design object, the attribute having a user-defined mapping between an attribute transformation and a design object transformation (abstract, para. 0040-0043, 0116-0126, 0148, 0174, 0214, 0216, 0227, 0274-0277).

(Claims 7, 22) wherein processing, top-down, comprising transferring information from a child graph to a parent graph, wherein a node in the parent graph represent an instance of the child graph (fig 41-45)

(Claims 8, 23) wherein processing, top-down, the graph comprises resolving boundary conditions (fig 3, 17, 20, 26-29, 34, 39, 41, 44), recursively, by adjusting a parent cell, beginning with a root cell of the graph (fig 3, 17, 20, 26-29, 34, 39, 41, 44)

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(Claims 9-11, 24-26) wherein each cell is represented by a plurality of connected least enclosing orthogonal point sets (fig 9, 12-15, 24-29); determining an interaction between the least enclosing orthogonal point sets; and determining a decomposition of the cell according to the interaction (fig 9, 12-15, 24-29); wherein processing, top-down, further comprises cloning by expression using a result of the decomposition to produce a cell definition ((fig 9, 12-15, 24-29)


### Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Dinh whose telephone number is 571-272-1890. The examiner can normally be reached on Monday to Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Paul Dinh  
Patent Examiner

A handwritten signature in black ink that reads "Paul Dinh". The signature is written in a cursive style with a long, sweeping underline.